L29: Entry 8 of 12 File: USPT Apr 1, 2003

DOCUMENT-IDENTIFIER: US 6542601 B1
TITLE: Method and system for automated customer support services

Abstract Text (1):
A system and method for accepting customer calls for product related services and directing these calls to an appropriate customer care center. The system contains a customer support network and a customer transaction database for storing a plurality of product information and vendor/customer data. A transaction processor is arranged to process calls routed through the network and determine the appropriate call center for a particular customer from the entry of a customer personal identification number provided to the customer. The number accompanies a telephone access number. Both numbers may be imprinted on a support card.

Brief Summary Text (7):
In a typical scenario, customer support requires that the organization expend both time and resources to maintain accessible updated product and customer information. Likewise, the consumer is often asked to remember product types and model numbers, date of sale, customer location and other information relating to a particular sales transaction. In short, providing effective customer support is often a tedious and time consuming process to both customer and organization.

Brief Summary Text (8):
Prior art systems and methods for vending and delivering customer service and support depend primarily on having the customer call into a product and/or customer care center or call center. Typically, a customer is asked to register a product with the organization and/or call center after the product purchase in order to receive support. Likewise, the customer is generally asked to repeat all the registration and product information upon future access to support. The integration of customer service calls with appropriate call centers has no theretofore been addressed in prior art systems. In addition, the process of manually or automatically routing customer service calls, based on product type and model and/or customer identification, to a correct one of many call centers, is not practiced by prior art systems.

Brief Summary Text (16):
Disclosed, in one embodiment, is a telecommunications network based system for accepting customer calls for product-related services and directing these calls to an appropriate call center. The system contains a customer support network and a customer transaction database for storing a plurality of product, vendor, and customer information including call routing data. The customer transaction database can be communicably linked to a customer support network via a first communications link. A transaction processor is arranged to process calls routed through the network. The transaction processor determines the appropriate care center for a particular customer based on the customer's identification. The customer (and the product purchased thereby) is identified by a customer personal identification number provided to the customer with a support card. The customer identification number along with an access telephone number may be provided to the customer at the time of product purchase or may be acquired by the customer in a separate transaction from the purchase of the product.

Detailed Description Text (6):
The present system further includes a second customer database 17 connected, via a generic rack 31, to IVR 12. Database 17 includes customer and/or product data, PIN, expiration, and incident count stored therein. Particular data is not limited to a particular database, nor is the present invention limited by the number of databases cited above. Data allocation and number of databases is limited only by the ordinary skill in the skilled artisan. The function of each of the above cited elements will be set out below in a discussion of the operation of the present invention.

Detailed Description Text (9):
Once a call is received by the IVR application 12, a customer represented by telephone 15, is asked to enter a Personal Identification Number ("PIN") 19 through use of touch tone frequencies per the telephone keypad 34 or other interactive means envisioned by the skilled artisan. The PIN is used to identify the individual customer via a customer account. The account will include such customer information as product type, previous service provided, limitations on service (discussed below), and other information envisioned by the skilled artisan to facilitate quick and efficient routing of the customer to the appropriate agent and delivery of effective customer and/or product support. In addition, the PIN facilitates tracking of the number and/or time of calls made by the customer 15 as well as the type of service provided to the customer. Accordingly, the support card 13 can be sold and serialized, bar coded, imprinted and/or sealed with the telephone access number and/or PIN during a card product manufacture. Various printing techniques can be used for this purpose as envisioned by the skilled artisan.

Detailed Description Text (10):
Once the caller is identified, platform 14, comprising first database 16 and transaction processor 18, queries the customer 15 (through the IVR) to determine the category and/or level of service required by the customer. The customer account is verified and authorized and the call is routed to the appropriate call center agent 26 via Computer Telephone Integration (CTI) 20. CTI retains customer and product information and facilitates routing of same with the telephone call to the appropriate call center agent 26. The first database 16 can be accessible via network 24 or maintained locally on the vendor's premises. In addition, the second database 17 is updated to include information regarding the caller, action taken, resolution and any other relevant information. Finally, in a second embodiment, the CTI need not be used.

Detailed Description Text (11):
The transaction processor 18 and first database 16 may be configured to provide several functions to the IVR application 12. Examples of such functions include, but are not limited to, PIN code verification, call routing based on PIN, customer reporting, and remote access to modify PIN account information of customers from customer workstations.

Detailed Description Text (17):
The SSCP 218 is an intelligent switch and service control point which facilitates audio communication and call processing with the customer over the incoming telephone call. The SSCP includes: a SSCP database 264 for storing voice prompts and customer and product data; IVR 12 for the generation of select voice prompts and queries to the customer; a dual tone multi-frequency detection element 260 for detection of DTMF signals over the incoming telephone call; and processor 252 for facilitating the aforementioned and following operations. The prompts and queries are intended to prompt the customer to enter his/her PIN 19 via telephone keypad as discussed above. Upon obtaining the PIN, the SSCP queries SSCP database 264 for identification of the customer and/or product associated with the PIN based on matching the PIN with accounts and data lists stored within the database. The SSCP also determines authorization for customer usage based on credits, expiration dates, and/or incidents number as discussed above. It is noted that SSCP database

can be maintained externally from the network and remotely accessed by the SSCP. An example of this arrangement is depicted in FIG. 1A (see element 17). The steps taking by the SSCP to obtain the PIN and other information from the customer are detailed below. Upon identification and authorization of the customer, the SSCP queries a service data point (SDP) 220 for routing information and related data as depicted by line 242.

Detailed Description Text (20):
CTI 20 may be resident outside call center 22 (FIG. 1A) or within call center 22 (FIG. 1B). CTI includes an automatic call distribution PBX (ACD) 221 for receiving the call from the terminating switch (line 248), via line 228, and for placing the customer on hold while searching for a free agent to receive the call. While the customer is on hold, the ACD may play music, advertisements and the like. Alternatively, the ACD may route the customer directly to an agent 26 if the agent is free. In essence, the ACD manages the agents workload by determining availability and forwarding contemporaneously customer calls and customer and product information to the agent. The forwarding of the call to the agent is depicted as line 250.

Detailed Description Text (27):
If the support cardholder has remaining incidents, the process proceeds to step 74. As shown in FIG. 2 and step 52, incoming calls to the call center 22 can fall back to a manual process if the host database system 17 is unavailable (step 62, FIG. 2 and 3). This feature is supported at step 72 wherein the system is set to play a message instructing the customer that the database is inaccessible. In step 74, a new message is played instructing cardholders to "please hold". Next, in step 76, the system can be configured to play music for the cardholder until a support card technician accepts the call at step 78. If so configured, the system continues to play music (step 80) until a support card technician accepts the call (step 78).

CLAIMS:

1. A system for receiving customer telephone calls for product and customer related services and routing the calls to pre-selected customer care centers, said system comprising in combination: a customer support card for displaying an access telephone number and a personal identification number (PIN), said support card associated with said product; and a switched network, for receiving at least one telephone call placed by dialing said access telephone number, said network further comprising at least one database for storing customer and product information therein, and said network facilitating the routing of said telephone call based on said customer and product information to at least one of said pre-selected customer care centers.

4. The system according to claim 3, wherein said plurality of network elements further comprise: an originating switch (OSW) positioned within said network for initially receiving said telephone call after said telephone call is made by said customer and selective routing said telephone call to other network elements; an internal routing platform (DAP) comprising a DAP database for storing network call routing data therein, said DAP positioned within said network so as to facilitate transmission of select network routing data with said OSW so as to further facilitate said selective routing; a switching service control point (SSCP) for facilitating voice interaction and receipt of information from said customer via said telephone call and generating queries for information, said SSCP positioned within said network so as to receive said routed telephone call, generate said queries to said customer via said telephone call, receive said information from said customer and selectively communicate with other network elements; a service data point (SDP) comprising a SDP database for storing information therein, said SDP positioned within said network so as to facilitate transmission of SDP data stored in said SDP database to said SSCP in response to selective queries from said SSCP; a call detail platform (CDP) comprising a CDP database for storing CDP data

therein, said CDP positioned within said network so as to facilitate gathering of network data related to network traffic and storing said network data in said CDP database; and a terminating switch (TSW) positioned within said network for facilitating routing of said call from said network to said call center.

6. The system according to claim 4, wherein said SSCP further comprises: a database for storing customer account data and voice prompts data therein; an interactive voice response unit for generating voice prompts to said customer over a telephone connection effected by said telephone call; first means for detecting and interpreting human voice or said dial tone manufactured frequencies generated by said customer over said telephone connection; second means for creating second data based on comparing said detected and interpreted dial tone with said customer account data stored in said database; and third means for routing said call, second data, customer and product information to said SDP.

7. The system according to claim 4, wherein said SDP data stored in said SDP database includes call routing information and customer and product identification.

20. The method according to claim 19, wherein: said OSW is positioned within said network for initially receiving said telephone call after said telephone call is made by said customer and selective routing said telephone call to other network elements; said DAP comprises a DAP database for storing network call routing data therein, said DAP positioned with said network so as to facilitate transmission of select network routing data with said OSW so as to further facilitate said selective routing; said SSCP facilitating voice interaction and receipt of information from said customer via said telephone call and generating queries for information, said SSCP positioned within said network so as to receive said routed telephone call, generate said queries to said customer via said telephone call, receive said information from said customer and selectively communicate with other network elements, and said SSCP further comprising a database for storing customer account data and voice prompts data therein, an interactive voice response unit for generating voice prompts to said customer over a telephone connection effected by said telephone call, first means for detecting and interpreting said dial tone manufactured frequencies generated by said customer over said telephone connection, second means for comparing said detected and interpreted dial tone with said customer data stored in said database, and third means for routing said call, second data, and customer and product information to said SDP; said SDP comprising a SDP database for storing information therein, said SDP positioned within said network so as to facilitate transmission of SDP data stored in said SDP database to said SSCP in response to selective queries from said SSCP, and said SDP data stored in said SDP database including call routing information and customer and product identification; said CDP comprising a CDP database for storing CDP data therein, said CDP positioned within said network so as to facilitate gathering of network data related to network traffic and storing of said network data in said CDP database, and said network data relate to usage time and incident number of customer access to said network; said TSW positioned within said network for facilitating routing of said call from said network to said call center; and said network is configured such that said telephone call received at said OSW is routed to said bridge switch based on information obtained by said OSW from said DAP; said telephone call is then routed from said bridge switch to said SSCP wherein said customer is queried by said SSCP and routing information is gathered from said SDP based on customer responses to said customer queries, said telephone call is then routed from said SSCP to said TSW based on said routing information, and said telephone call is routed from said TSW to said call center.

26. The system according to claim 25, further comprising a second database, communicably linked to said IVR, said second database receiving and retrievably storing customer information from said IVR, said customer information including customer identification information and PIN.

27. The system according to claim 26, wherein said customer information includes by the IVR, expiration dates for PINs and incidents. numbers for customers identified by said PINs.

28. The system according to claim 24, further comprising at least one computer telephone integration (CTI) communicably linked between said network and said customer call center such that said CTI receives information from said network and facilitates communication of said information to said customer call center.

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L29: Entry 10 of 12 File: USPT Dec 4, 2001

DOCUMENT-IDENTIFIER: US 6327363 B1
TITLE: Method and system for automated customer services

Abstract Text (1):
A system and method for accepting customer calls for product related services and directing these calls to an appropriate customer service center. The system contains a customer service network and a customer transaction database for storing a plurality of product information and vendor/customer data. A transaction processor is arranged to process calls received through the network and to route the calls to an appropriate care center for a particular customer in accordance with data associated with a customer-entered personal identification number provided to the customer at the time of purchase. The services are provided on the basis of a pre-paid account, which is debited after a service agent answers the customer call based on signaling generated at the call center.

Brief Summary Text (7):
In a typical scenario, customer support requires the customer to provide an assortment of information, such as the model number, the product type, the date of purchase, the sales location, and other information pertaining to a particular sales transaction, in order to obtain product support. For example, vendors commonly require a customer to register their product in order to receive customer support (e.g., by way of a mail-in product registration card, a time-consuming phone call to the vendor, or a post-purchase, online registration process). This process requires considerable time and effort on the part of both the customer and the vendor and can lead to customer frustration, limiting the number of customers who actually register their products. As a result, valuable customer and product information is never captured by the vendor, and customer dissatisfaction with the product and or vendor may be increased.

Brief Summary Text (8):
Typically, these customer support services are provided through a toll-free telephone number that enables a customer to reach a customer support agent at a call center. For example, a vendor that sells a software product may provide a 1-800 number with the product for their customers to call in order to obtain support for the software product. When the customer calls the 1-800 number, the call is connected to a technical support agent at a call center. Because many customer's fail to properly register their product purchase with the vendor, the support agent often must verbally collect information from the customer before having sufficient information to provide satisfactory support. This process may further irritate a customer already frustrated by the need for support in the first place. Providing customer support services is also typically a great expense for a vendor. The vendor must cover the cost of the customer support agent's time and the cost of the toll-free call. In addition, considerable time and resources are required to collect and manage current information about the product and the customer. Often, there is no tracking of the time spent serving the customer or of other call characteristics that would be useful in managing the customer support process. It would be advantageous for the vendor limit the amount of free support it provides or to provide customer support on a paid basis. Consequently, improvements in customer support methods and systems can help improve customer relations and reduce the costs of customer service.

Brief Summary Text (10):
Consequently, need exists for a universal application to maintain an information database used for integration of customer services with the product registration and the delivery of customer support services. Both vendors and customers would derive tremendous benefits from such an application. When purchasing a product, it would be desirable for a customer to acquire a credit/debit card entitling them to obtain a specified amount of product support from the vendor, so that customer, product, and vendor information could be associated with the card at or prior to the actual purchase. Likewise, it would be advantageous for a vendor to manage customer support costs and improve customer service business processes through enhanced information gathering and database capabilities.

Brief Summary Text (12):
A system and method in accordance with the present invention permit product and service vendors to control access to call center services through an intelligent network, preferably employing an automated interactive voice response application. The present invention can, for example, be utilized to collect warranty and product registration information, to measure entitlement to support services, and to collect and process customer, product, and vendor information. In one embodiment, the present invention provides a vehicle for vendors (i.e., product and/or service providers) to charge and receive revenue for their support services, which traditionally have been a necessary expense of doing business. Furthermore, the services provided in accordance with the present invention can involve services other than customer support services. Additionally or alternately, other services may be provided within the scope of the present invention, including without limitation news and sports update lines, financial services, and celebrity chat lines.

Brief Summary Text (14):
Another advantage of the present invention is an automated interactive voice application for acquiring information from a customer call by using a set of predefined recorded instructions and options from a network-based database, thereby allowing the customer to customize the services received.

Brief Summary Text (18):
Disclosed, in one embodiment, is a system for accepting customer calls for product related services and directing these calls to an appropriate customer service center. The system contains a customer service network and a customer transaction database for storing a product information and vendor/customer data. The customer transaction database can be communicably linked to a customer service network via a communications link. A transaction processor is arranged to process calls received through the network and to determine the appropriate service center for a particular customer from the entry of a personal identification number (PIN) provided to the customer at the time of purchase. The PIN may be used as a key to access data in the customer transaction database.

Detailed Description Text (6):
Service card 200 is associated with a pre-paid account configured on a customer transaction database 210. An account may include customer, vendor, and product information, such as a customer ID, vendor ID, product registration number, and product type. The pre-paid account preferably entitles a customer to a limited amount of customer service. A customer's service entitlement may be provided in various ways: first, a caller may be allowed to place a limited amount of service calls or incidents. Accordingly, limits may be placed on the number of service incidents, the duration of service calls, the total amount of service per unit of time, and the time period in which these incidents must be used (e.g., a card may be valid for one year from date of purchase or for 90 days from the date of first use). A second type of entitlement involves an unlimited number of calls not exceeding a predetermined amount of time in aggregate. If the balance of pre-paid

service is substantially depleted, the customer is preferably given the opportunity to "recharge" the pre-paid balance (e.g., such as by providing a credit card number) to add additional service entitlement. Other limitations may also be applied to the amount of service available.

Detailed Description Text (21):
When a service card is supplied with a vendor's product, an associated pre-paid account is provisioned on the SDP 404. The account may be provisioned with a set amount of customer service in terms of a number of calls, a number of call minutes, or some other metric. The service card may also be provisioned with no entitlement, if the product vendor so desires, requiring the customer to pay for initial service. Other information may also be included in the account, as the product vendor desires. Such information may be completely or selectively available to a service agent from the account database when the customer calls in for customer service. In an exemplary embodiment, customer information can be presented to a customer service agent at his or her workstation before the agent answers the customer's call. The information can include without limitation warranty information, recall information, customer identity, vendor location, and rebate information. Accordingly, the customer need not provide this information over the phone before receiving service.

Detailed Description Text (34):
In operation 742, the selected agent station receives selected data from the customer's pre-paid service account on the SDP and preferably displays the data on a screen to the agent. The data stored in a pre-paid service account can vary widely based on the vendor's requirements. Product information, such as product registration number and product type, can be provisioned in the pre-paid account when the account is first configured and before any calls are accepted. Customer information, such as customer name, geographical location, and service preferences, can be collected by the IP during the call and stored in the SDP. Any of this information can be retrieved by and presented to the agent station in operation 742. Alternately, access restrictions can limit the data accessible by the agent.

Detailed Description Text (46):
Operation 862 plays an audio message indicating the account balance associated with the PIN. Service card accounts can be configured to provide service from a single terminating number (e.g., a single service center handling all customer calls). Alternately, accounts can be configured to provide services from more than one terminating number (e.g., support for a product from a customer service center, billing support from a financial service center, and account information from a customer service center). Operation 864 determines whether the card has a single terminating number. If the account supports a single terminating number, then operation 865 records the termination number, which is required for call routing, and proceeds to operation 880 to connect the call to the terminating number.

Detailed Description Text (47):
If the account supports multiple terminating numbers, operation 866 plays an audio menu from which the caller may select using DTMF signals or voice responses, which are monitored in operation 868. For example, the illustrated embodiment supports at least six menu options: "account information", "customer service", "operator assistance", "terminating number selection", "recharge", and "exit"; and two exceptions: "time-out", and "invalid selection". The "account information" option is implemented in operation 872, which plays a voice message indicating the expiration date and account balance before returning to the audio menu of operation 866. The "customer service" option is implemented in operation 874, which transfers the caller to a customer service representative. The customer service representative can re-transfer the customer back into the service card system, if necessary. The "operator assistance" option is implemented in operation 876, which transfers the caller to an operator via ISN 310 of FIG. 3. The operator can re-transfer the customer back into the service card system, if necessary. The

"terminating number selection" option is implemented in operation 878, which records the selected termination number and proceeds to operation 880 to connect the call to the selected terminating number. The "recharge" option is implemented in operation 833, which allows the caller to increase the balance the pre-paid service card account. The "exit" option allows the caller to terminate the call, which the caller may also accomplish by merely hanging up. If the caller "times-out" or enters an invalid option, operation 870 determines whether to allow the caller to retry the selection or to terminate the call. The foregoing describes a set of preferred menu options and responses, but it should be recognized that other options and responses are contemplated as being within the scope of the present invention. For example, menu options can lead to sub-menus in a hierarchical menu structure. Alternately, a particular option may require a predetermined password to be entered to obtain access to certain features within the service card system.

CLAIMS:

44. The method of claim 43 wherein the operation of limiting said duration of said call comprises:

prompting said customer with a recharge instruction if said account balance is substantially depleted;

receiving information from said customer to recharge said account; and

modifying said account balance in accordance with said received information.

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